

REMARKS

Claims 1, 3, 5, and 10-14 are all of the claims pending in the application. Applicants have herein canceled claims 2, 4, and withdrawn claims 5-9, and have added claims 10-14. Entry and consideration of this Amendment are respectfully requested.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 3, 5, and 10 are rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Ohsaki et al. (U.S. Patent 6,878,360; hereinafter “Ohsaki”).

Applicants have herein incorporated the features of claim 2 into claim 1 and have canceled claim 2.

With regard to claim 2, the Examiner alleges that it would have been obvious to modify Ohsaki to include the graphite target and light source of Achinami to maintain better control over the final nanocarbon products’ chief characteristics (Office Action, page 4). The Examiner maintained this position during the interview.

Applicants respectfully submit that it would not have been obvious to modify Ohsaki in this manner because the method of producing carbon fibers using a furnace (as in Ohsaki) and the method using laser ablation (as in Achinami and the present invention) are fundamentally different methods that pose their own unique characteristics. Furthermore, Applicants have further amended claim 1 to recite, among other features, “a recovery chamber which is positioned to recover generated nanocarbon that floats up into the recovery chamber.”

Ohsaki discloses that the use of a furnace to produce carbon fibers presents the problem that fibrous products are deposited on the inside surface of the furnace (column 2, lines 6-11), and that fibers falling down through the reactor are deposited on these fibrous products, thus

forming an increased amount of the fibrous products which finally block the furnace reactor (column 2, lines 29-35). On the other hand, use of a graphite target and light source, such as in laser ablation, produces nanohorn assemblies having a very low density which results in the produced nanohorn assemblies easily drifting in the air (*see* present Application, page 2, first full paragraph). Applicants submit that one skilled in the art would not have been led to switch the furnace/reactor components required in a carbon fiber production device directed at a problem inherent in the furnace/reactor method with a graphite target and light source used in the laser ablation method. Moreover, switching the furnace/reactor components of Ohsaki for the graphite target and light source would present a new problem that the nanohorn assemblies would float and be difficult to recover as discussed above.

Accordingly, it is submitted that the unique combination of claim 1 is patentable over the art of record at least for the above reasons. Furthermore, because claims 2, 3, 5 and 10 depend from claim 1, these claims are patentable at least by virtue of their dependency.

Claim Rejections - 35 U.S.C. § 103

Claim 2 is rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Ohsaki in view of Achinami.

Applicants have incorporated claim 2 into claim 1 and have canceled claim 2. Thus, this rejection is discussed above as it relates to claim 1.

Claim 4 is rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Ohsaki in view of Achinami and further in view of Miley et al. (U.S. Patent 6,171,451; hereinafter "Miley").

Applicants have herein canceled claim 4. Thus, this rejection is moot.